



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/622,942	08/24/2000	Brian John Bastable	111869-00113	5468

27557 7590 02/26/2003

BLANK ROME COMISKY & MCCAULEY, LLP
900 17TH STREET, N.W., SUITE 1000
WASHINGTON, DC 20006

EXAMINER

JOLLEY, KIRSTEN

ART UNIT	PAPER NUMBER
----------	--------------

1762

DATE MAILED: 02/26/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/622,942

Applicant(s)

BASTABLE ET AL.

Examiner

Kirsten Crockford Jolley

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-44, 48-55 and 58-61 is/are rejected.
- 7) ☒ Claim(s) 45-47, 56 and 57 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments/Amendments

1. The claim objection and 35 USC 112, 2nd paragraph rejections have been withdrawn in response to Applicant's amendments to the claims.
2. The 35 USC 102(b) rejections over the Henricks reference have been withdrawn. Applicant argues that Henricks comprises two oxyanion-containing layers and therefore claim 31 does not anticipate the method of Henricks. In response to Applicant's arguments, claim 31 has been interpreted as being limited to *only one* layer of a non-metallic chemical coating comprising an oxyanion (and is not inclusive of two different, single layers of a non-metallic chemical coating comprising an oxyanion). For this reason, the rejections over both Henricks and Caldwell et al. have been withdrawn.
3. The claims are newly rejected over the prior art of Jones et al. and Heyes as set forth below.
4. Applicant's arguments filed December 6, 2002 have been fully considered but they are not persuasive.

With respect to the 35 USC 102(b) and 103(a) rejections over WO '582 (Shimizu et al.), Applicant argues that Shimizu et al. teaches a first layer of metallic chromium on the cleaned metal surface, and then a second layer of chromium oxide thereover with a layer of thermoplastic resin applied to the chromium oxide layer. Applicant argues that Shimizu et al. do not teach laminated mild steel strips having a coating comprising *a single layer* of an oxyanion applied to the cleaned metal surface and *a single layer* of a thermoplastic resin applied thereover. The

Art Unit: 1762

Examiner disagrees. Shimizu et al. does teach a single layer of chromium oxide, and a single layer of thermoplastic resin. While it is acknowledged that there is an additional layer of chromium metal applied directly on the mild steel substrate, this layer does not comprise an oxyanion. Applicant argues that Shimizu et al. do not teach or suggest that the metallic chromium layer could be omitted and a skilled person would have no motivation for omitting this layer for fear of compromising the value of the specific surface area. This is acknowledged. However, it is noted that the claims do not require that the single non-metallic chemical coating comprising an oxyanion is applied *directly* on the substrate. In other words, claim 31 as written does not exclude the presence of an additional coating layer underneath the oxyanion-containing layer. Therefore, the Examiner does not suggest the removal of the metallic chromium layer, rather it is the Examiner's position that the method of Shimizu et al. meets the steps set forth in claim 31. The Examiner notes that if Applicant amends claim 31 to require that the non-metallic chemical coating is applied *directly* on the substrate surface then the rejections over WO '582/Shimizu et al. will be withdrawn.

With respect to the 35 USC 103(a) rejections over Murase, Applicant argues that none of the examples in Murase disclose laminated mild steel sheets comprising a coating comprising a *single layer* of an oxyanion applied to the cleaned metal sheet and a second *single layer* of a thermoplastic resin applied thereover. The Examiner disagrees. In Example 5 of Murase, it is noted that Murase applies a single layer of zinc phosphate on the mild steel sheet, and a single layer of the multilayer coat-forming paint (which is formed on a tetraphenyl arsonium chloride layer applied over the zinc phosphate layer). While it is acknowledged that there is an additional

Art Unit: 1762

onium layer applied directly on the zinc phosphate layer, under the thermoplastic paint, this layer does not comprise an oxyanion nor is it thermoplastic. Claim 31 does not exclude the presence of an additional coating layer applied between the oxyanion layer and the thermoplastic layer.

Applicant argues that it would not be obvious to a skilled person in view of Murase to reduce the number of layers used in the formation of the laminated steel sheet to a single layer comprising an oxyanion having a single layer of a thermoplastic resin thereover. This is acknowledged. However, it is noted that the claims do not require that the single thermoplastic layer is applied *directly* on the oxyanion-containing layer, and Applicant's use of broad "comprising" language does not exclude the presence of additional steps or coatings. Therefore, the Examiner does not suggest the removal of any of Murase's layer, rather it is the Examiner's position that the method of Murase meets the steps set forth in claim 31. The Examiner notes that if Applicant amends claim 31 to require that the thermoplastic coating layer is applied *directly* on the substrate surface then the rejections over Murase will be withdrawn.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 48 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 48 appears to be new matter because the specification does not appear

Art Unit: 1762

to specifically disclose the use of silanes having the claimed structure. Applicant argues in the response that “those of ordinary skill in the art recognize that silanes have the general structure $R-Si-X_3$ as recited in claim 48.” However, the Examiner notes that while the use of “silanes” is disclosed in the specification, silanes are not necessarily limited to the claimed organofunctional silanes. For example, SiH_4 is a silane and does not have the claimed structure. Therefore, it is the Examiner’s position that there is not support in the specification for the specific structure claimed in claim 48.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 44 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 44, line 2, “oxyanions selected from phosphate, chromate, oxalate and arsenate” is improper Markush language. The Examiner suggests adding “--the group consisting of--” after “from” and before “phosphate.”

Claim Rejections - 35 USC § 102

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 31-33, 36-37, 42-44, 51-52, and 58-61 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/16582 A1 (US 6,280,852 B1 to Shimizu et al. is used as a working translation of WO ‘582).

WO '582 is applied for the same reasons set forth in the prior Office action, as well as for the reasons discussed above in paragraph 4.

Claim Rejections - 35 USC § 103

10. Claims 34, 38-41, and 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/16582 A1 (US 6,280,852 B1 to Shimizu et al. is used as a working translation of WO '582).

WO '582 is applied for the same reasons set forth in the prior Office action, as well as for the reasons discussed above in paragraph 4.

11. Claims 31-34, 36-44, 49-52, and 59-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murase (US 4,305,994).

Murase is applied for the same reasons set forth in the prior Office action, as well as for the reasons discussed above in paragraph 4.

12. Claims 31-34, 43-44, 50, 52-55, 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US 5,725,944).

Jones et al. discloses a process for coating metal used in a process of manufacturing cans. Jones et al. teaches that the metal substrate may be phosphated blackplate (mild steel) at col. 2, lines 46-53. Jones et al. teaches that a coating comprising poly(ethylene-co-diethylene terephthalate) copolyesters, which are thermoplastic, is applied onto the metal (phosphated blackplate) substrate. Phosphated blackplate inherently comprises a single oxyanion-containing

Art Unit: 1762

(phosphate) layer. Jones et al. teaches a single layer of thermoplastic applied thereon. While it is acknowledged that Jones et al. teaches that the phosphated blackplate is *preferably* chromate rinsed after phosphating, the use of the term “preferably” necessarily means that the chromating step is optional and may be excluded, thus leaving a single phosphate layer on the blackplate.

Jones et al. does not specifically state a step of cleaning the mild steel sheet prior to phosphate-treating. The Examiner notes that it is well known in the coating art to clean substrates prior to coating in order to remove contaminants which detrimentally affect the adhesiveness of the coating on the substrate surface. It would have been obvious for one having ordinary skill in the art to have cleaned the steel/blackplate substrate prior to phosphate treatment with the expectation of improving the effectiveness and the adhesion of the phosphate coating and subsequent coatings.

As to claims 33-34, Jones et al. teaches a metal gauge of 0.05 to 0.5 mm (col. 4, lines 29-30). As to claim 50, the phosphated coating of Jones et al. inherently comprises less than 5 atomic % chromium since the layer comprises no chromium. As to claim 52, Jones et al. teaches that the thermoplastic resin is applied to one or both sides of the metal strip at col. 4, lines 3-4. As to claim 53, Jones et al. teaches melting and rapidly quenching the thermoplastic resin at col. 4, lines 14-20. As to claims 54 and 55, Jones et al. teaches extrusion coating at col. 3, line 66 to col. 4, line 14 which necessarily includes conditions of elevated temperature and pressure.

As to claim 59, Jones et al. teaches that the thermoplastic coating has a thickness of 5 to 50 microns. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Jones et al.’s

Art Unit: 1762

thickness range that corresponds to the claimed range. *In re Malagari*, 184 USPQ 549 (CCPA 1974).

13. Claims 31-34, 43-44, 50, 52-55, 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heyes (US 5,238,517).

Heyes discloses a process for coating metal used in a process of manufacturing can ends. Heyes teaches that the metal substrate may be phosphated blackplate (mild steel) at col. 2, line 41. Heyes teaches that a coating comprising PET, which is thermoplastic, is applied onto the second major surface of the metal substrate (film 32 in Figure 5 and laminates A, B, and D in Table 1), which is a single layer of thermoplastic material. Phosphated blackplate inherently comprises a single oxyanion-containing (phosphate) layer. While it is acknowledged that Heyes teaches that the phosphated blackplate is *preferably* chromate rinsed after phosphating, the use of the term “preferably” necessarily means that the chromating step is optional and may be excluded, thus leaving a single phosphate layer on the blackplate.

In the response, Applicant argues that Heyes teaches using sheets onto which a coating of chromium has been formed, and that such chromically treated starting materials are excluded from the scope of claims 31-61. While it is noted that Heyes teaches chromically treated steel as the preferred substrate, Heyes also teaches the use of phosphated blackplate as an alternative to chromically treated steel.

Heyes does not specifically state a step of cleaning the mild steel sheet prior to phosphate-treating. The Examiner notes that it is well known in the coating art to clean substrates prior to coating in order to remove contaminants which detrimentally affect the

Art Unit: 1762

adhesiveness of the coating on the substrate surface. It would have been obvious for one having ordinary skill in the art to have cleaned the steel/blackplate substrate prior to phosphate treatment with the expectation of improving the effectiveness and the adhesion of the phosphate coating and subsequent coatings.

As to claims 33-34, Heyes teaches a metal gauge of 0.05 to 0.4 mm (col. 2, lines 36-37). As to claim 50, the phosphated coating of Heyes inherently comprises less than 5 atomic % chromium since the layer comprises no chromium. As to claim 52, Heyes teaches that the PET resin is applied to one side of the metal strip in Table 1. As to claim 53 and 55, Heyes teaches melting and rapidly quenching the thermoplastic resin which includes conditions of elevated temperature and pressure (col. 4, lines 9-27). As to claim 54, Heyes teaches extrusion at col. 5.

As to claim 59, Heyes teaches that the PET coating has a thickness of 15 microns in Table 1.

14. Claims 36-42, 49, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. or Heyes as applied to claims 31-34, 43-44, 50, 52-55, 58-61 above, and further in view of Collier et al. (US 4,881,975).

Jones et al. and Heyes lack the specific details under which phosphate treating blackplate occurs. Collier et al. is cited for its teaching of conventional phosphate treating of blackplate and steel substrates at col. 6, lines 34-46.

As to claims 36-37, Collier et al. is not limited as to the means for phosphating the steel substrate, however the method of Collier et al. uses immersion to phosphate its steel substrate (col. 7, lines 1-10). It would have been obvious for one skilled in the art to have similarly

Art Unit: 1762

phosphated the blackplate substrate in the method of Jones et al. or Heyes by immersion with the expectation of similar, successful results since it is a successful coating method for Collier et al. As to claims 38-41, it is the Examiner's position that it would have been obvious for one having ordinary skill in the art to have determined the optimum residence time and temperature of the phosphating bath through routine experimentation in the absence of a showing of criticality. Further, it is noted that the residence times and temperature of Collier et al.'s phosphating bath overlaps the claimed times and temperatures.

As to claim 49, Collier et al. teaches that the phosphate used may be of ferrous iron, manganese or zinc. As to claim 51, Collier et al. teaches that the phosphated surface may be rinsed with water after coating, i.e., prior to application of subsequent layers.

15. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO '582, Murase, or Jones et al. as applied to claim 31 above, and further in view of Baker et al. (US 3,775,151).

Baker et al. is applied for the same reasons set forth in the prior Office action.

16. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murase as applied to claim 60 above, and further in view of WO 97/16582 A1.

WO '582 is applied for the same reasons set forth in the prior Office action.

Allowable Subject Matter

Art Unit: 1762

17. Claims 45-48 and 56-57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or fairly suggest the use of a non-metallic chemical coating comprising an oxyanion, as set forth in claim 31, whereby the non-metallic chemical coating additionally comprises: a two-component organic polymer; chromium, silicon, and an organic active species; one or more of yttrium, elements in the lanthanum series of the periodic table, silanes or azoles; silanes of the formula claimed in claim 48; or a polyester or an acid or acid-anhydride polyolefin resin as claimed in claim 56.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten Crockford Jolley whose telephone number is 703-306-5461. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193.

kcj

February 24, 2003


SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700